Foreword

Using a watershed approach provides a unique and effective way to assess the environment, identify problems, establish priorities for preservation or restoration, and implement solutions. The Watershed Analysis and Management (WAM) Program is an effort to guide communities in the successful application of a watershed approach and led to the development in 2002 of this *Watershed Analysis and Management (WAM) Guide for States and Communities*.

The Environmental Protection Agency's (EPA) Office of Wetlands, Oceans, and Watersheds (OWOW) and the American Indian Environmental Office (AIEO) collaborated in 1997 on a joint project to develop a comprehensive WAM methodology. The initial WAM approach was based on watershed planning efforts in the Pacific Northwest, including the Washington State watershed analysis methodology for state and private forest lands and the Northwest Forest Plan watershed analysis guide for federal ownership. The concept was to extend existing capabilities to address a nationwide range of ecological environments, project objectives, and watershed management issues at the state, community, and tribal levels. With substantial support from the AIEO, a more comprehensive approach was undertaken to include the additional issues of tribal cultural and community values. The first product, *Watershed Analysis and Management (WAM) Guide for Tribes*, was developed with a system development grant from OWOW to the Pacific Watershed Institute, concurrent with pilot applications of the approach, through AIEO grants, by tribes representing different ecological environments, objectives, and community issues.

The *Watershed Analysis and Management (WAM) Guide for Tribes* was published in September 2000. In addition, tribal WAM field training was developed and implemented with the White Mountain Apache team, with the *WAM Field Course Training Guidance* produced in 2001. A related effort, using a watershed approach to Total Maximum Daily Loads (TMDLs), was undertaken with the Navajo Nation in Window Rock, Arizona, and the guide *Internal Capacity Building for Tribal TMDLs* was produced in 2002. Simultaneously, the WAM process was applied to state and community projects, including development of a *Watershed Quality Management Plan*. This plan serves as a template for incorporating quality assurance into other watershed plans and documents.

The *Watershed Analysis and Management (WAM) Guide for States and Communities* has been strengthened by application of the WAM process in watersheds across the United States. The guide incorporates knowledge gained through recent applications of the WAM process to a large-scale county watershed project in Ohio and to a tri-county coalition watershed project in the Snohomish River basin in Washington State. Examples from these projects are included in the guide.

The WAM program has benefited from major program support and technical contributions from OWOW and AIEO; Dave Somers, President, Pacific Watershed Institute; Steve Toth, consultant and a principal contributor to both the *Watershed Analysis and Management (WAM) Guide for Tribes* and the *Watershed Analysis and Management (WAM) Guide for States and Communities*; the tribal pilot leads, Tammis Coffin, Latane Donelin, Jonathan Long, and John Sims; and Paul Braasch, Environmental Coordinator, Clermont County, Ohio, whose inputs made major contributions to this document.

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This guide is patterned after a number of watershed analysis methods developed in the Pacific Northwest. These efforts to promote watershed analysis have been an invaluable source of information for this guide and include the Washington State methodology developed for the Washington Forest Practices Board, the Federal guide for watershed analysis produced by the Regional Ecosystem Office, and the Oregon watershed assessment manual created for the Governor's Watershed Enhancement Board.

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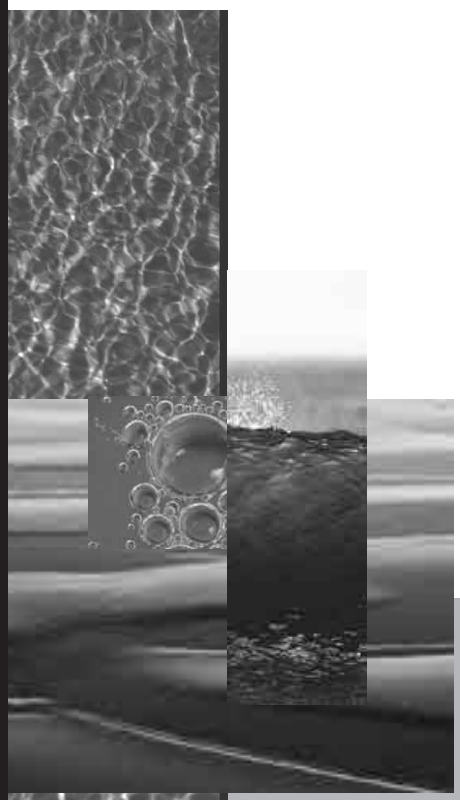

Acronym List

BIA	Bureau of Indian Affairs
BOD	Biochemical oxygen demand
BLM	Bureau of Land Management
BMP	Best management practice
cfs	cubic feet per second
CWA	Clean Water Act
DO	Dissolved oxygen
EPA	U.S. Environmental Protection Agency
ESA	Endangered Species Act
FEMA	Federal Emergency Management Agency
GIS	Geographic Information System
HUC	Hydrologic Unit Code
IAC	Intergovernmental Advisory Committee
IFIM	Instream Flow Incremental Methodology
NCASI	National Council of the Paper Industry for Air and Stream Improvement
NMFS	National Marine Fisheries Service
NOAA	National Oceanic and Atmospheric Administration
NPDES	National Pollutant Discharge Elimination System
NRCS	U.S. Department of Agriculture Natural Resources Conservation Service
NWI	National Wetland Inventory
PAHs	Polycyclic aromatic hydrocarbons
PCBs	Polychlorinated biphenyls
QA/QC	Quality assurance/quality control
RCRA	Resource Conservation and Recovery Act
RIEC	Regional Interagency Executive Committee
RUSLE	Revised Universal Soil Loss Equation
SCS	U.S. Department of Agriculture Soil Conservation Service
TIA	Total impervious area
TMDL	Total Maximum Daily Load
TSS	Total suspended solids
USACE	U.S. Army Corps of Engineers
USDA	U.S. Department of Agriculture
USDI	U.S. Department of the Interior
USFS	U.S. Department of Agriculture Forest Service
USFWS	U.S. Fish and Wildlife Service
USGS	U.S. Geological Survey
WAM	Watershed Analysis and Management
WEPP	Water Erosion Prediction Procedure
WFPB	Washington Forest Practices Board